Day 1 December 3 (Mon), 2018

Main Hall, 2F, ROHM Theatre Kyoto

15:00 - 15:10 Opening Remarks

15:10 - 16:00 Plenary Lecture 1

Chair: Shiroh Futaki (Kyoto University)

15:10 - 16:00 **PL-01** **Redesign of Vancomycin for Resistant Bacteria**

Dale L. Boger

The Scripps Research Institute, Department of Chemistry, 10550 N. Torrey Pines Rd., La Jolla CA 92037, USA

16:00 - 18:45 Session 1: Novel Synthetic Methodology

Chairs: Takayuki Doi (Tohoku University)
Gong Chen (Nankai University)

16:00 - 16:28 **O-01** **Enabling Technologies for Translating Bioactive Peptides into Therapeutics**

Qing Lin

Department of Chemistry, State University of New York at Buffalo, Amherst, New York 14260, USA

16:28 - 16:44 **O-02** **Multivalent Ligand Design – Chemistry and Applications**

Markus Muttenthaler[1, 2]

[1]*Institute of Biological Chemistry, University of Vienna,*
[2]*Institute for Molecular Bioscience, The University of Queensland*

16:44 - 17:00 **O-03** **Npys-Based Solid Phase Disulfide-Peptide Synthesis and its Application to Peptide–Drug Conjugates**

Akihiro Taguchi, Kyohei Muguruma, Yoshio Hayashi

Department of Medicinal Chemistry, Tokyo University of Pharmacy and Life Sciences

17:00 - 17:28 **O-04** **C-H Functionalization Strategy for Synthesis of Complex Peptides**

Gong Chen

State Key Lab of Elemento-Organic Chemistry, Nankai University, China

17:28 - 17:45 **Break**

17:45 - 18:13 **O-05** **Chemical Protein Synthesis with the KAHA Ligation**

Jeffrey Bode[1,2]

[1]*Laboratory of Organic Chemistry, ETH Zürich, Zürich, Switzerland,*
[2]*Institute of Transformative bio-Molecules (ITbm), Nagoya University, Nagoya, Japan*

18:13 - 18:29 **O-06** **The Discovery and Application of Ynamide Coupling Reagents**

Junfeng Zhao

College of Chemistry and Chemical Engineering, Jiangxi Normal University

18:29 - 18:45 **O-07** **Peptide Self-Cleavage Reaction Using an Aminooxy Group: Application to a Solubilizing Tag System for Native Chemical Ligation**

Shugo Tsuda, Hideki Nishio, Taku Yoshiya

Peptide Institute, Inc.

Day 2 December 4 (Tue), 2018

Main Hall, 2F, ROHM Theatre Kyoto

9:15 - 12:40 Session 2: Advances in Protein Synthesis

Chairs: Hironobu Hojo (Osaka University)
Philip Dawson (The Scripps Research Institute)

9:15 - 9:43 **O-08** **Automated protein synthesis using SEA chemistry**

Oleg Melnyk[1], Vangelis Agouridas[1], Nathalie Ollivier[1], Marine Cargoët[1], Rémi Desmet[1], Annick Blanpain[1], Hervé Drobecq[1], Vincent Diemer[1], Benoit Snella[1], Thomas Toupy[2], Jean-Christophe M Monbaliu[2]

[1]UMR CNRS 8204, Chemical Biology of Flatworms, Université de Lille, Institut Pasteur de Lille, 1 rue du Pr Calmette, 59021 Lille Cedex, France,
[2]Center for Integrated Technology and Organic Synthesis, UR Molecular Systems, Department of Chemistry, University of Liège, B-4000 Liège (Sart Tilman), Belgium

9:43 - 10:03 **O-09** **Synthesis, 3D Structure Analysis, and Biological Evaluation of Apratoxin A and its Analogues**

Takayuki Doi

Graduate School of Pharmaceutical Sciences, Tohoku University

10:03 - 10:19 **O-10** **β-Thiolactone Enabled Peptide Ligation and Preparation**

Qiang Zhang

State University of New York, University at Albany

10:19 - 10:47 **O-11** **New tools for protein chemical synthesis and modification**

Xuechen Li

Department of Chemistry, State Key Laboratory of Synthetic Chemistry, The University of Hong Kong, Hong Kong SAR, China

10:47 - 11:12 **Break**

11:12 - 11:40 **O-12** **Use of Chemical Protein Synthesis to Develop Tool Molecules for Studying Protein Ubiquitination**

Lei Liu

Tsinghua University

11:40 - 12:00 **O-13** **Dressed-up Artificial Viral Capsids self-assembled from Viral beta-Annulus Peptides**

Kazunori Matsuura

Faculty of Engineering, Tottori University

12:00 - 12:16 **O-14** **Improved TRAP Display for Selection of Monobodies, Nanobodies, and Macrocyclic Peptides**

Hiroshi Murakami, Taishi Kondo, Keigo Ishizaki, Seita Kito, Takahiro Sezaki, Tomoshige Fujino

Department of Biomolecular Engineering, Graduate School of Engineering, Nagoya University, Japan

12:16 - 12:28 **O-15** **Preparation of Protein Thioesters Enabled by Carboxypeptidase-mediated C-Terminal Specific Hydrazinolysis**

Chiaki Komiya, Jun Tsukimoto, Masahiro Ueda, Takuya Morisaki, Tsubasa Inokuma, Akira Shigenaga, Kohji Itoh, Akira Otaka

Institute of Health Biosciences and Graduate School of Pharmaceutical Sciences, Tokushima University

12:28 - 12:40 **O-16** **Development of On-resin Synthesis of Cyclic Disulfide Peptides Using Methyl 3-Nitro-2-pyridinesulfenate**

Kiyotaka Kobayashi, Akihiro Taguchi, Kyohei Muguruma, Kentaro Takayama, Atsuhiko Taniguchi, Yoshio Hayashi

Department of Medicinal Chemistry, School of Pharmacy, Tokyo University of Pharmacy and Life Sciences

14:50 - 19:00 Session 3: Chemical Biology and Bioimaging

Chairs: Toru Kawakami (Osaka University)
James P. Tam (Nanyang Technological University)

14:50 - 15:18 **O-17** **Peptide Thioamides for In Vivo Applications**

E. James Petersson, Taylor Barrett, Chunxiao Liu, Xing Chen

University of Pennsylvania, Department of Chemistry

15:18 - 15:38 **O-18** **Exploiting organic “name reactions” for chemoselective peptide engineering**

Philip Dawson, Dillon Flood, Philip Cistrone, Mike Bird, Tony Silvestri, Jordi Hintzen

Department of Chemistry, The Scripps Research Institute, La Jolla, 92037, USA

15:38 - 15:50 **O-19** **Expanding the Versatility of the Oxime Ligation to Disulfide –Rich Peptides**

Anke Hering[1], Markus Muttenthaler[1, 2]

[1]*Institute for Molecular Biosciences, The University of Queensland, St. Lucia, Queensland, Australia,*
[2]*Faculty of Chemistry, Institute of Biological Chemistry, University of Vienna, Vienna, Austria*

15:50 - 16:02 **O-20** **Synthetic Strategy of Peptidomimetic Based on Chloroalkene Dipeptide Isoteres and Its Biological Application**

Takuya Kobayakawa, Hirokazu Tamamura

Department of Medicinal Chemistry, Institute of Biomaterials and Bioengineering (IBB), Tokyo Medical and Dental University (TMDU)

16:02 - 16:18 **O-21** **Identify amyloidogenic peptides in TDP-43 and create photocontrollable probes for neurodegenerative disease studies**

Jen-Tse Huang

Institute of Chemistry, Academia Sinica

16:18 - 16:46 **O-22** **Cyclisation of conotoxins as an engineering tool to modulate folding, analgesic potency and biopharmaceutical properties**

David J. Craik, Xiaosa Wu, Yen-Hua Huang, Quentin Kaas

Institute for Molecular Bioscience, The University of Queensland, Brisbane, QLD 4072, Australia

16:46 - 17:16 **Break**

Chairs: Akira Otaka (Tokushima University)
E. James Petersson (University of Pennsylvania)

17:16 - 17:44 **O-23** **Design, Folding and Self-assembly of Collagen Triple Helices**

Jeffrey D. Hartgerink

Rice University, Departments of Chemistry and Bioengineering, Houston, Texas, USA

17:44 - 18:04 **O-24** **Targeting Unfolded Collagen by Cyclic Collagen-Mimetic Peptides**

Takaki Koide[1], Koh K. Takita[1], Kazunori K. Fujii[1], Ryo Masuda[1], Tetsuya Kadonosono[2], Hiroyuki Kimura[3]

[1]Department of Chemistry and Biochemistry, School of Advanced Science and Engineering, Waseda University, Shinjuku, Tokyo, 169-8555, Japan,
[2]Department of Life Science and Technology, School of Life Science and Technology, Tokyo Institute of Technology, Yokohama, Kanagawa, 226-8501, Japan,
[3]Department of Analytical and Bioinorganic Chemistry, Division of Analytical and Physical Sciences, Kyoto Pharmaceutical University, Yamashina, Kyoto 607-8414, Japan

18:04 - 18:20 **O-25** **Discovery of "Photo-Degradation Tag of Protein" Derived from Squalene Synthase**

Yasushi Takemoto[1], Di Mao[1], Louvy Punzalan[1], Sebastian Goetze[1], Motonari Uesugi[1, 2]

[1]Institute for Chemical Research, Kyoto University, [2]iCeMS, Kyoto University

18:20 - 18:32 **O-26** **Affinity-Controlled Induction of Immune Responses by Bispecific Cross-Linkers between Antibody-Fc and Tumor Antigens**

Koichi Sasaki[1], Minori Harada[2], Hiroshi Tagawa[1], Akihiro Kishimura[1, 2, 3, 4], Takeshi Mori[1, 2, 3], Yoshiki Katayama[1, 2, 3, 4, 5, 6]

[1]Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Japan,
[2]Graduate School of Systems Life Sciences, Kyushu University, Japan,
[3]Center for Future Chemistry, Kyushu University, Japan,
[4]International Research Center for Molecular Systems, Kyushu University, Japan,
[5]Centre for Advanced Medicine Innovation, Kyushu University, Japan,
[6]Department of Biomedical Engineering, Chung Yuan Christian University, Taiwan

18:32 - 19:00 **O-27** **Peptidyl Adaptogenics**

James P. Tam

Nanyang Technological University

Day 2 December 4 (Tue), 2018

South Hall, 1F, ROHM Theatre Kyoto

9:15 - 12:40 Session 4: Peptides in Diseases

Chairs: Yoshio Hayashi (Tokyo University of Pharmacy and Life Sciences)
Yan-Mei Li (Tsinghua University)

9:15 - 9:27 **O-28** **Semisynthesis of Glycosyl-Sialyltransferase bearing a Homogeneous *N*-linked Oligosaccharide**

Arisa Shimada, Yuta Maki, Ryo Okamoto, Masayuki Izumi, Yasuhiro Kajihara

Department of Chemistry, Graduate School of Science, Osaka University, Japan

9:27 - 9:39 **O-29** **Fluorocarbon-peptide conjugates (FPC): new concept to increase the metabolic stability of peptides for therapeutic applications**

Sridevi Maalika Ramanoudjame[1], Lucie Esteoulle[1], Adrien Flahault[4], Cendrine Seguin[2], Stéphanie Riché[1], Béatrice Heurtault[2], Romain Hany[3], Patrick Gizzi[3], Xavier Iturrioz[4], Sylvie Fournel[2], Benoit Frisch[2], Catherine Llorens Cortes[4], Dominique Bonnet[1]

[1]Laboratoire d'Innovation Thérapeutique, UMR 7200 CNRS-Université de Strasbourg, Faculté de Pharmacie, LabEx MEDALIS, Illkirch,
[2]Laboratoire de Conception et Application de Molécules Bioactives, UMR 7199 CNRS-Université de Strasbourg, Faculté de Pharmacie, Illkirch,
[3]Plateforme de Chimie Biologie Intégrative, UMS3286 CNRS-Université de Strasbourg, LabEx MEDALIS Illkirch,
[4]Centre Interdisciplinaire de Recherche en Biologie, UMR 7241/ Inserm U1050, Collège de France

9:39 - 9:55 **O-30** **Novel Therapeutic Peptides Derived from Human Essential Enzymes**

Sunghoon Kim

Medicinal Bioconvergence Research Center Department of Molecular Medicine and Biopharmaceutical Sciences Graduate School of Convergence Science and Technology College of Pharmacy, Seoul National University, Korea

9:55 - 10:15 **O-31** **Structure Evolution of Tetramer Formation in p53/p63/p73 Family**

Kazuyasu Sakaguchi

Department of Chemistry, Faculty of Science, Hokkaido University

10:15 - 10:43 **O-32** **The Power of Isoacyl Chemistry: Its Application to Insulin and Glucagon**

Fa Liu

Novo Nordisk Research Center, Seattle, Washington 98109

10:43 - 11:08 **Break**

11:08 - 11:36 **O-33** **Synthesizing Site-Specific Phosphorylated TDP 43 Prion-like Domain: Novel Material for Studying the Function of PS404 Modification**

Qian-Qian Li, Yu-Qing Liu, Yan-Mei Li

Key Lab. of Bioorganic Phosphorus Chemistry & Chemical Biology, Department of Chemistry, Tsinghua University

11:36 - 11:56 **O-34** **Peptidomimetic-based mid-size drugs: anti-cancer and anti-HIV agents**

Hirokazu Tamamura

Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University

11:56 - 12:12 **O-35** **Method to generate highly stable D-amino acid analogs of bioactive helical peptides using a mirror image of the entire PDB**

Philip M. Kim

University of Toronto

12:12 - 12:40 **O-36** **High-Affinity Peptidomimetic Inhibitors of the DCN1-UBC12 Protein-Protein Interaction and Therapeutic Applications**

Shaomeng Wang

University of Michigan, Ann Arbor, MI, USA

14:50 - 19:00 Session 5: Peptide Interaction with Membranes

Chairs: Katsumi Matsuzaki (Kyoto University)
Yangmee Kim (Konkuk University)

14:50 - 15:10 **O-37** **Lipid domain formation and reduction of membrane fluidity: Initiating events of bacterial growth inhibition and cell death induced by R-,W-rich cyclic hexapeptides**

Kathi Scheinpflug[1], Christof Junkes[1], Oxana Krylova[1], Henrik Strahl[2], Margitta Dathe[1]

[1]Leibniz Forschungsinstitut für Molekulare Pharmakologie, Berlin, Germany,
[2]Institute for Cell and Molecular Biosciences, Newcastle University, Newcastle upon Tyne, UK

15:10 - 15:38 **O-38** **Histidine-rich designer peptides with antimicrobial, transfection and transduction activities**

Burkhard Bechinger[1], Justine Wolf[1], Luic Vermeer[1], Arnaud Marquette[1], Morane Lointier[1], Jesus Raya[1], Philippe Bertani[1], Denis Wilkins Juhl[1], Antoine Kichler[2], Martin Gotthard[3], Max Wittmann[3], Regine Süss[3], Louic Hamon[4], Anne Galy[4,5], David Fenard[5]

[1]University of Strasbourg/CNRS, Chemistry, F-67070 Strasbourg,
[2]University of Strasbourg/CNRS, Pharmacy, F-67401 Illkirch,
[3]University of Freiburg, Pharmaceutical technology, D-79104 Freiburg,
[4]University of Evry/INSERM, F-91000 Evry, [5]Généthon, F-91000 Evry

15:38 - 16:06 **O-39** **Papiliocin is a Promising Peptide Antagonist of Toll Like Receptor 4 with a Therapeutic Potential for the Treatment of Sepsis**

Yangmee Kim

Department of Bioscience and Biotechnology, Konkuk University

16:06 - 16:34 **O-40** **Kinked amphipathic peptides potentiates activities of various gram-positive antibiotics by perturbing outer membrane of gram-negative bacteria**

Jaehoon Yu[1], Yoonwha Choi[1], Yong Pil Chong[2], Sujin Park[2], Soonsil Hyun[3], Seoyeon Kim[1], Sun Mi Jin[1], Doyeon Jo[1], Soeun Bae[1], Seonju Lee[4], Kyung Kyu Kim[5], Yang Soo Kim[2], Yan Lee[4]

[1]Department of Chemistry & Education, Seoul National University, Seoul 08826, Korea,
[2]Department of Infectious Diseases, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea,
[3]Institute of Molecular Biology & Genetics, Seoul National University, Seoul 08826, Korea,
[4]Department of Chemistry, Seoul National University, Seoul 08826, Korea,
[5]Department of Molecular Cell Biology, Sungkyunkwan University School of Medicine, Suwon 61439, Korea

16:34 - 16:50 **O-41** **High-Resolution NMR Studies of Peptide-Antibiotics in Cell Membranes**

João Medeiros-Silva, Shehrazade Jekhmane, Eefjan Breukink, Markus Weingarth

Bijvoet Center for Biomolecular Research, Utrecht University, The Netherlands

16:50 - 17:20 **Break**

Chairs: Shunsaku Kimura (Kyoto University)
Ferenc Hudecz (Eötvös Loránd University)

17:20 - 17:48 **O-42** **Unnatural cyclic peptides inspired by natural products: cell permeability and biological activity from diverse scaffolds**

R. S. Lokey[1], Colin N. Kelly[1], Matthew R. Naylor[1], Victoria G. Klein[1], Chad E. Townsend[1], Andrew M. Ly[1], Joshua Schwochert[2], Cameron R. Pye[2]

[1]Department of Chemistry and Biochemistry, University of California Santa Cruz, 1156 High St., Santa Cruz, CA 95064, United States,
[2]Unnatural Products, 335 Shake Mill Rd, Santa Cruz, CA 95060

17:48 - 18:08 **O-43** **Cyclosporin O derivatives: synthesis, structural investigation, and biological applications**

Jiwon Seo, Dongjae Lee

Department of Chemistry, School of Physics and Chemistry, Gwangju Institute of Science and Technology, Gwangju 61005, Republic of Korea

18:08 - 18:24 **O-44** **The Use of Peptide-Membrane Interactions in the Design of Selective and Potent Sodium Channel Inhibitors**

Christina I. Schroeder[1], Akello J. Agwa[1], Steve Peigneur[2], Chen Yuen Chow[1], Alexander Mueller[1], Nicole Lawrence[1], Evelyne Deplazes[3], Alan E. Mark[4], David J. Craik[1], Glenn F. King[1], Irina Vetter[1], Jan Tytgat[2], Sónia Troeira Henriques[1]

[1]Institute for Molecular Bioscience, [2]Katholic University of Leuven, [3]Curtin University, [4]The University of Queensland

18:24 - 18:36 **O-45** **L17E-mediated Cytosolic Delivery and its Mode of Action**

Misao Akishiba, Shiroh Futaki

Institute for Chemical Research, Kyoto University

18:36 - 18:48 **O-46** **Generation and Screening of Gramicidin A-Based Library**

Yuri Takada, Hiroaki Itoh, Masayuki Inoue

Graduate School of Pharmaceutical Sciences, The University of Tokyo

18:48 - 19:00 **O-47** **Vesicle-to-sheet Transition of Copolymer Modified Liposomes with Membrane Disruptive Peptide**

Tomoka Takenaka, Takuro Ochiai, Wakako Sakamoto, Tsukuru Masuda, Naohiko Shimada, Atsushi Maruyama

School of Life Science and Technology

Day 3 December 5 (Wed), 2018

Main Hall, 2F, ROHM Theatre Kyoto

9:10 - 12:05 Session 6: Structurally Constrained Peptides

Chairs: Masakazu Tanaka (Nagasaki University)
Gilles Guichard (University of Bordeaux)

9:10 - 9:26 **O-48** **Blocking Protein-DNA Interactions with Stapled Peptides**

Federico Bernal, Merissa Baxter, Sterling Robert Payne

Laboratory of Protein Dynamics and Signaling, National Cancer Institute, National Institutes of Health USA

9:26 - 9:42 **O-49** **Silencing Intracellular Protein-Protein Interactions with Covalent Helical Peptide Inhibitors**

Aline Dantas de Araujo[1], Junxiam Lim[1], Andrew C. Good[2], Renato T. Skerlj[2], David P. Fairlie[1]

[1]Institute for Molecular Bioscience, University of Queensland, Brisbane, QLD 4072, Australia, [2]Noliva Therapeutics, Newton, MA 02465, USA

9:42 - 10:10 **O-50** **Peptide backbone engineering using oligourea foldamers : Structural insights and biological perspectives**

Gilles Guichard

University of Bordeaux

10:10 - 10:37 **Break**

10:37 - 11:05 **O-51** **Platforms for the generation and screening of cyclic peptide libraries**

Ali Tavassoli

School of Chemistry, University of Southampton, Southampton, United Kingdom

11:05 - 11:21 **O-52** **Precise Disulfide Pairing to Approach the Entire Sequence Space for Searching Bioactive Disulfide-Rich Peptides**

Chuanliu Wu

Department of Chemistry, College of Chemistry and Chemical Engineering, Xiamen University

11:21 - 11:37 **O-53** **Fluorescent PPI-visualization of Cyclized Helix-Loop-Helix Peptide "MicroAntibody" Inhibiting Intracellular HDM2-p53 interaction**

Daisuke Fujiwara[1], Kazunori Zikihara[1], Shunsuke Inaura[1], Masataka Michigami[1], Eiji Yuba[2], Ikuhiko Nakase[1], Ikuo Fujii[1]

[1]Department of Biological Science, Graduate School of Science, Osaka Prefecture University, [2]Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University

11:37 - 12:05 **O-54** **Aromatic foldamer-based protein mimicry and recognition**

Ivan Huc

Department of Pharmacy, Ludwig-Maximilians-University Munich, Germany

Day 3 December 5 (Wed), 2018

South Hall, 1F, ROHM Theatre Kyoto

9:10 - 12:05 Session 7: Peptide Materials

Chairs: Motoyoshi Nomizu (Tokyo University of Pharmacy and Life Sciences)
Joel Schneider (National Cancer Institute)

9:10 - 9:38 **O-55** **Structure-based design of peptide assemblies affords gels that facilitate suturing of ultrasmall blood vessels**

Joel Patrick Schneider

National Cancer Institute, National Institutes of Health, USA

9:38 - 10:06 **O-56** **Controlled Hierarchical Assembly of Helical Foldamers**

Hee-Seung Lee

Department of Chemistry, Center for Multiscale Chiral Architectures, KAIST, Daejeon 34141, Republic of Korea

10:06 - 10:22 **O-57** **Functional Peptide-Modified Dendrimers: From Artificial Proteins to Nanomedicine**

Chie Kojima

Department of Applied Chemistry, Graduate School of Engineering, Osaka Prefecture University

10:22 - 10:38 **O-58** **Site-specific Chemical Modification of Antibody by Affinity Peptide to Generate Multi-functional Antibody Medicines**

Yuji Ito

Department of Chemistry and Bioscience, Graduate School of Science and Engineering, Kagoshima University

10:38 - 11:05 **Break**

11:05 - 11:33 **O-59** **Electric Properties of Peptide Self-Assemblies Having Macrodipole Moments**

Shunsaku Kimura, Hirotaka Uji, Yuki Tabata, Hiroshi Omura, Yusuke Kamano

Department of Material Chemistry, Graduate School of Engineering, Kyoto University

11:33 - 11:49 **O-60** **A semi-synthetic approach to engineer ion channels in live cells**

Keith Khoo, Iacopo Galleano, Stephan Alexander Pless

University of Copenhagen

11:49 - 12:05 **O-61** **Metal Induced Self-Assembly of Collagen-Mimetic Peptides: Morphology Modulation and Hydrolytic Catalysis Evaluation**

Jia-Cherng Horng, Yi-Han Ting, Hsuan-Ju Chen, Wan-Jung Cheng

Department of Chemistry, National Tsing Hua University

Day 4 December 6 (Thu), 2018

Main Hall, 2F, ROHM Theatre Kyoto

9:10 - 12:35 Session 8: Peptides in Biosignaling

Chairs: Hidehito Mukai (Nagahama Institute of Bio-Science and Technology)
Annette Beck-Sickinger (Leipzig University)

9:10 - 9:38 **O-62** **Structural Insights in the Binding Mode of Neuropeptide Y and Approaches in Tumour Targeting**

Annette G. Beck-Sickinger

Institute of Biochemistry, Leipzig University, Brüderstr, 34, D 04103 Leipzig, Germany

9:38 - 9:54 **O-63** **Turripeptides from Turrid Snails: Extending the Search for Neuroactive Peptide Drug Candidates to an Untapped Megadiverse Group of Conoideans**

Gisela P. Concepcion[1], Carla A. Omaga[1], April B. Cabang[1], Victor M. Chua[1], Julita S. Imperial[2], Baldomero M. Olivera[2]

[1]The Marine Science Institute, University of the Philippines,
[2]Department of Biology, University of Utah

9:54 - 10:06 **O-64** **Identification of Human Neuropeptide Homologues in Animal Venoms Using Hidden Markov Models**

Helen Mendel[1], Quentin Kaas[1], Paul Alewood[1], Markus Muttenthaler[1, 2]

[1]Institute for Molecular Bioscience, University of Queensland, St. Lucia, Queensland, Australia,
[2]Faculty of Chemistry, Institute of Biological Chemistry, University of Vienna, Vienna, Austria

10:06 - 10:34 **O-65** **Orexin Neurons at the Interface of Systems that Regulate Emotion and Arousal/Vigilance**

Takeshi Sakurai

Faculty of Medicine/WPI-IIIS, University of Tsukuba

10:34 - 10:46 **O-66** **Development of Positive Modulators of Histone H3K27 Methylation**

Yasuaki Tokodai[1], Fumika Yakushiji[2], Toru Sengoku[3], Akira Katsuyama[2], Satoshi Ichikawa[2]

[1]Hokkaido University, Graduate School of Life Science,
[2]Hokkaido University, Faculty of Pharmaceutical Sciences,
[3]Yokohama City University, Graduate School of Medicine

10:46 - 11:11 **Break**

11:11 - 11:39 **O-67** **Peptidases, Peptides, and Peptidomics: New Insights into Functional Roles of Peptides in Cellular Signaling**

Lloyd D. Fricker

Department of Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY, USA

11:39 - 11:55 **O-68** **Intracellular peptides from cell biology to pharmacology**

Emer S. Ferro

University of Sao Paulo

11:55 - 12:15 **O-69** **Targeting NCOA1 Transcription Coactivator Using Peptidomimetics**

Yeongju Lee, Hyun-Suk Lim

Department of Chemistry and Division of Advanced Materials, Pohang University of Science and Technology, Pohang 37673, South Korea

12:15 - 12:35 **O-70** **Synthesis and structure-activity relationship studies of insulin/insulin-like peptides**

Nitin Patil[1,2], Praveen Praveen[1], Xiaozhou Zhang[1], Ross Bathgate[1], John Wade[1,3], M. Akhter Hossain[1,3]

[1]Department of Microbiology, Monash University,
[2]Florey Institute of Neuroscience and Mental Health, University of Melbourne, Victoria 3010, Australia,
[3]School of Chemistry, University of Melbourne, Victoria 3010, Australia

14:50 - 15:25 Akabori Memorial Award Lecture

Chair: Hisakazu Mihara (Tokyo Institute of Technology)

14:50 - 15:25 **AW-01** **Amino Acid Chalcogen Analogs as Tools in Peptide and Protein Research**

Luis Moroder

Max-Planck-Institute of Biochemistry, Martinsried, Germany

15:35 - 19:00 Session 9: Therapeutic Design

Chairs: Hirokazu Tamamura (Tokyo Medical and Dental University)
Norbert Sewald (Bielefeld University)

15:35 - 15:55 **O-71** **Nutrient-Oriented Peptide Library as a Source of Energy Metabolism Modulators**

Motonari Uesugi[1,2]

[1]*Institute for Chemical Research and Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University,*
[2]*AMED-CREST*

15:55 - 16:23 **O-72** **Synthetic Studies of Immunostimulating Peptide-Glycan Conjugates: Development of New Adjuvants and Application to New Cancer Immunotherapies**

Koichi Fukase[1,2,3], Yoshiyuki Manabe[1,2], Kazuya Kabayama[1,2,3], Tsung-Che Chang[1], Feng Qi[1], Yuka Nimura[1], Yukari Fujimoto[4], Yoshie Kametani[5], Shino Ohshima[5], Asuka Miyamoto[5], Chun-Cheng Lin[6]

[1]*Deaprtment of Chemistry, Graduate School of Science, Osaka University,*
[2]*Core for Medicine and Science Collaborative Research and Education, Project Research Center for Fundamental Sciences, Osaka University,*
[3]*Institute for Radiation Sciences, Osaka University,*
[4]*Department of Chemistry, Faculty of Science and Technology, Keio University,*
[5]*Faculty of Medicine, School of Medicine, Tokai University,*
[6]*Department of Chemistry, National Tsing Hua University*

16:23 - 16:43 **O-73** **Mirror-Image Screening of Chiral Natural Products for SH2 Domain Inhibitors**

Shinya Oishi[1], Taro Noguchi[1], Keitou Shu[1], Kaori Honda[2], Yasumitsu Kondoh[2], Hiroyuki Osada[2], Hiroaki Ohno[1], Nobutaka Fujii[1]

[1]*Graduate School of Pharmaceutical Sciences, Kyoto University, Sakyo-ku, Kyoto 606-8501, Japan,*
[2]*Chemical Biology Research Group, RIKEN Center for Sustainable Resource Science, Wako, Saitama 351-0198, Japan*

16:43 - 16:55 **O-74** **Endowment of pH Responsivity to Anti-Cancer Peptides by Introducing Unnatural Amino Acid Residues**

Naoto Tanishiki, Yoshiaki Yano, Katsumi Matsuzaki

Graduate School of Pharmaceutical Sciences, Kyoto University

16:55 - 17:07 **O-75** **Peptide-Based Vaccines to Treat Foot-And-Mouth Disease: Exploring Their Efficacy and Molecular Mode of Action**

Mar Forner[1, 2], Sónia Troeira Henriques[1], David Craik[1], Sira Defaus[2], David Andreu[2]

[1]*Institute for Molecular Bioscience, The University of Queensland,*
[2]*Departament de Ciències Experimentals i de la Salut, Pompeu Fabra University*

17:07 - 17:32 **Break**

17:32 - 18:00 **O-76** **Controlling RAS with Monobodies**

Shohei Koide

Perlmutter Cancer Center and Department of Biochemistry and Molecular Pharmacology, New York University School of Medicine, New York, U.S.A.

18:00 - 18:28 **O-77** **Twofold bio-orthogonal derivatization by different formylglycine-generating enzymes**

Tobias Krüger[1], Stefanie Weiland[2], Georg Falck[3], Marcus Gerlach[1], Mareile Boschanski[2], Kristian M. Müller[3], Thomas Dierks[2], Norbert Sewald[1]

[1]Bielefeld University, Faculty of Chemistry, Organic and Bioorganic Chemistry, PO Box 100131, 33501 Bielefeld, Germany,
[2]Bielefeld University, Faculty of Chemistry, Biochemistry, PO Box 100131, 33501 Bielefeld, Germany,
[3]Bielefeld University, Faculty of Technology, Cellular and Molecular Biotechnology, PO Box 100131, 33501 Bielefeld, Germany

18:28 - 18:44 **O-78** **Homogeneous Antibody-Drug Conjugates (ADCs) by a Tryptophan-Selective Protein Bioconjugation**

Kounosuke Oisaki[1], Takashi Ishiyama[1, 2], Atsushi Kawamura[1], Kuniko Saiki[1], Yuki Kobayashi[1], Katsuya Maruyama[1], Yohei Seki[1], Keita Iguchi[2], Masaru Mitsuda[2], Motomu Kanai[1]

[1]Graduate School of Pharmaceutical Sciences, The University of Tokyo,
[2]KANEKA Corporation, Biotechnology Research Laboratories

18:44 - 19:00 **O-79** **Quantitative Single Cell Analysis for Transcriptional Activity and Oligomerization of Tumor Suppressor Protein p53**

Rui Kamada, Yu Toguchi, Junya Wada, Madoka Kanno, Toshiaki Imagawa, Kazuyasu Sakaguchi

Department of Chemistry, Faculty of Science, Hokkaido University

Day 4 December 6 (Thu), 2018

South Hall, 1F, ROHM Theatre Kyoto

9:10 - 9:30 JPS Young Investigators Award Lecture 1

Chair: Takayuki Doi (Tohoku University)

9:10 - 9:30 **AW-02** **3D Structure-Activity Relationship Study of Naturally Ocurring Peptides and its Application to Drug Design**

Yuichi Masuda

Graduate School of Bioresources, Mie University, 1577 Kurimamachiya-cho, Tsu, 514-8507, Japan

9:30 - 12:35 Session 10: Cell-Penetrating Peptides and Drug Delivery

Chairs: Ikuhiko Nakase (Osaka Prefecture University)
Jaehoon Yu (Seoul National University)

9:30 - 9:58 **O-80** **The power of chemoselectivity: Functional peptide and protein-conjugates for extra- and intracellular targeting**

Christian Peter Hackenberger[1,2]

[1]Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP) Campus Berlin-Buch Robert-Roessle-Str. 10 13125 Berlin, Germany,
[2]Humboldt Universität zu Berlin, Institut für Chemie, Brook-Taylor-Str. 2 12489 Berlin, Germany

9:58 - 10:26 **O-81** **Lipid-sensitive amphiphilic peptides for intracellular delivery of biomacromolecules**

Shiroh Futaki

Institute for Chemical Reserch, Kyoto University

10:26 - 10:42 **O-82** **Targeting Intracellular Protein-Protein Interactions with Macrocyclic Peptides**

Dehua Pei

Department of Chemistry and Biochemistry, The Ohio State University

10:42 - 11:07 **Break**

11:07 - 11:27 **O-83** **Cell-penetrating peptide foldamers for drug delivery system**

Makoto Oba, Masakazu Tanaka

Graduate School of Biomedical Sciences, Nagasaki University

11:27 - 11:43 **O-84** **Intracellular target delivery of boron compounds using cell-penetrating peptides for boron neutron capture therapy (BNCT)**

Ikuhiko Nakase[1, 2], Miku Katayama[1, 2], Yoshishide Hattori[3], Miki Ishimura[3], Ikuo Fujii[1], Shiroh Futaki[4], Mitsunori Kirihata[3]

[1]*Graduate School of Science, Osaka Prefecture University, Japan,*
[2]*NanoSquare Research Institute, Osaka Prefecture University, Japan,*
[3]*Research Center of BNCT, Osaka Prefecture University, Japan,*
[4]*Institute for Chemical Research, Kyoto University, Japan*

11:43 - 11:55 **O-85** **Toxicity and Mechanism of Action of Cyclic Helix-Loop-Helix Peptide**

Gregoire J-B Philippe[1], Diana Gaspar[2], Yen-hua Huang[1], Joachim Weidmann[1], Nicole Lawrence[1], Johannes Koehbach[1], Caibin Sheng[3], Alexander Löwer[3], Miguel ARB Castanho[2], David J. Craik[1], Sonia T. Henriques[1]

[1]*Institute for Molecular Bioscience, The University of Queensland, QLD 4072, Australia,*
[2]*Faculdade de Medicina da Universidade de Lisboa, 1649-028 Lisboa, Portugal,*
[3]*Technical University Darmstadt, 64287 Darmstadt, Germany*

11:55 - 12:07 **O-86** **Enhanced cellular exosome uptake efficacy by modification of cell-penetrating sC18 peptides on exosomal membranes**

Kosuke Noguchi[1], Constance Chollet[2], Ines Neundorf[2], Ikuhiko Nakase[1]

[1]*Department of Biological Science, Graduate School of Science, Osaka Prefecture University, Japan,*
[2]*Institute of Biochemistry, Department of Chemistry, University of Cologne, Germany*

12:07 - 12:35 **O-87** **Blood-Brain Barrier Shuttle Peptides, from Discovery to Applications**

Meritxell Teixidó

Institute for Research in Biomedicine (IRB Barcelona), Barcelona Institute of Science and Technology (BIST), Baldiri Reixac 10, Barcelona 08028, Spain

15:35 - 19:00 Session 11: Peptide Biophysics and Analytical Methods

Chairs: Kazuyasu Sakaguchi (Hokkaido University)
James G. Omichinski (University of Montreal)

15:35 - 15:55 **O-88** **Antibodies from multiple sclerosis patients preferentially recognize hyperglucosylated adhesin of non-typeable Haemophilus influenzae**

Anna Maria Papini[1,2,3], Paolo Rovero[1,4], Francesco Lolli[5], Roberta Lanzillo[6], Chiara Testa[1,2], Barbara Imperiali[7], Marthe Walwoort[7,8], Raya Eilam[9], Rina Aharoni[10], Francesca Nuti[1,2], Vincenzo Brescia Morra[6]

[1]French-Italian Interdepartmental Laboratory of Peptide & Protein Chemistry & Biology, [2]Department of Chemistry "Ugo Schiff", University of Florence, Italy, [3]PeptLab@UCP and Laboratory of Chemical Biology, University of Paris-Seine, France, [4]Department of Neurosciences, Psychology, Drug Research and Child Health - Section of Pharmaceutical Sciences and Nutraceutics, University of Florence, Italy, [5]Department of Biomedical, Experimental and Clinical Sciences, University of Florence, Italy, [6]Multiple Sclerosis Clinical Care and Research Centre, Department of Neurosciences, Reproductive Sciences and Odontostomatology, Federico II University of Naples, Italy, [7]Departments of Biology and Chemistry, Massachusetts Institute of Technology, Cambridge, MA, USA, [8]Stratingh Institute for Chemistry, University of Groningen, the Netherlands, [9]Department of Veterinary Resources, The Weizmann Institute of Science, Rehovot, Israel, [10]Department of Immunology, The Weizmann Institute of Science, Rehovot, Israel

15:55 - 16:23 **O-89** **The role of phosphorylation and acetylation in regulating SUMO-SIM interactions in proteins recruited to promyelocytic leukemia (PML) nuclear bodies (PML-NB)**

James G. Omichinski

Department of Biochemistry and Molecular Medicine, University of Montreal, Montreal, Qc Canada

16:23 - 16:39 **O-90** **Effect of Arginine Modification on Structure and Function**

Richard P. Cheng

Department of Chemistry, National Taiwan University

16:39 - 16:51 **O-91** **Total chemical synthesis and biophysical characterisation of trefoil factor 3**

Nayara Braga Emidio[1], Hue Tran[1], Christina Schroeder[1], Paul Alewood[1], Markus Muttenthaler[1, 2]

[1]Institute for Molecular Bioscience, The University of Queensland, Brisbane, Queensland 4072, Australia, [2]Institute of Biological Chemistry, Faculty of Chemistry, University of Vienna, 1090 Vienna, Austria

16:51 - 17:07 **O-92** **Nontraditional noncovalent interactions in protein structure and design**

Neal J. Zondlo

Department of Chemistry and Biochemistry, University of Delaware, United States

17:07 - 17:32 **Break**

17:32 - 18:00 **O-93** **Investigating peptaibols by synthesizing analogs and exploiting EPR**

Marta De Zotti[1], Barbara Biondi[2], Cristina Peggion[1], Marina Gobbo[1,2], Marco Crisma[2], Claudio Toniolo[1,2], Simona Oancea[3], Victoria N. Syryamina[4,5], Sergei A. Dzuba[4,5], Fernando Formaggio[1,2]

[1]Department of Chemical Sciences, University of Padova, 35131 Padova, Italy, [2]Institute of Biomolecular Chemistry, Padova Unit, CNR, 35131 Padova, Italy, [3]"Lucian Blaga" University of Sibiu, Department of Agricultural Sciences and Food Engineering, 550012 Sibiu, Romania, [4]Institute of Chemical Kinetics and Combustion, RAS, Novosibirsk 630090, Russian Federation, [5]Novosibirsk State University, Novosibirsk 630090, Russian Federation

18:00 - 18:20 **O-94** **Construction of supramolecular peptide hydrogels functionalized with bioactive sequences for 3D cell culture**

Hiroshi Tsutsumi, Jyh Yea Chia, Iori Kodama, Hisakazu Mihara

School of Life Science and Technology, Tokyo Institute of Technology

18:20 - 18:32 **O-95** **Helical Secondary Structures of Peptides Composed of Cyclic Amino Acids with a Chiral Acetal Moiety**

Ryo Eto[1], Makoto Oba[1], Atsushi Ueda[1], Mitsunobu Doi[2], Yosuke Demizu[3], Masaaki Kurihara[4], Masakazu Tanaka[1]

[1]Department of Pharmaceutical Chemistry, Graduate School of Biomedical Sciences, Nagasaki University, [2]Osaka University of Pharmaceutical Sciences, [3]National Institute of Health Sciences, [4]International University of Health and Welfare

18:32 - 19:00 **O-96** **Artificial β-Double Helices from γ-Peptides**

Hosahudya N. Gopi

Department of Chemistry, Indian Institute of Science Education and Research, Dr. Homi Bhabha Road, Pune-411 008

Day 5 December 7 (Fri), 2018

Main Hall, 2F, ROHM Theatre Kyoto

9:10 - 12:25 Session 12: Frontier of Industrial Applications

Chairs: Hiroaki Suga (The University of Tokyo)
Thomas Kodadek (The Scripps Research Institute)

9:10 - 9:43 **O-97** **Development of glycosylated somatostatin having extended half-life and native-like binding profile**

Hirofumi Ochiai, Hayato Saijo, Takahiro Yamamoto, Yuji Nishiuchi, Akio Kanatani, Taiji Shimoda

GlyTech, Inc.

9:43 - 10:16 **O-98** **Tolerance of helix-breaking residues within the context of a stapled peptide**

Anthony William Partridge[1], Hung Yi Kristal Kaan[1], Yu-Chi Juang[1], Ahmad Sadruddin[1], Shuhui Lim[1], Christopher J. Brown[2], Simon Ng[2], Dawn Thean[2], Fernando J. Ferrer[2], Charles Johannes[2], Tsz Ying Yuen[2], Srinivasaraghavan Kannan[2], Pietro Aronica[2], Mohan R. Pradhan[2], Chandra S. Verma[2], Jerome Hochman[3], Shiying Chen[3], Hui Wan[3], David P. Lane[2], Tomi K. Sawyer[3]

*[1]MSD, Singapore, [2]A*STAR, Singapore, [3]Merck & Co., USA*

10:16 - 10:49 **O-99** **Targeting Malaria and Tuberculosis with PDPS**

Nasir Kato Bashiruddin

PeptiDream Inc.

10:49 - 11:19 **Break**

11:19 - 11:52 **O-100** **Design & Data Visualization Approaches for the Engineering of Nav1.7-Inhibitory Peptide-Antibody Hybrids with Enhanced Potency and Pharmacokinetics**

Les P. Miranda

Amgen Research, Amgen Inc., One Amgen Center Drive, Thousand Oaks, CA 91320, USA

11:52 - 12:25 **O-101** **Peptoid-like Inhibitors of Proteasome Accessory Factors as Potential Chemotherapeutics**

Thomas Kodadek, Paige Dickson, Scott Simanski, Darci Trader

Department of Chemistry, The Scripps Research Institute, 130 Scripps Way, Jupiter FL USA 33458

Day 5 December 7 (Fri), 2018

South Hall, 1F, ROHM Theatre Kyoto

9:10 - 9:30 JPS Young Investigators Award Lecture 2

Chair: Yoshio Hayashi (Tokyo University of Pharmacy and Life Sciences)

9:10 - 9:30 **AW-03** **Medicinal chemistry based on mid-sized peptides derived from biomolecules**

Kentaro Takayama

Departmant of Medicinal Chemistry, Tokyo University of Pharmacy and Life Sciences, 1432-1 Horinouchi, Hachioji, Tokyo 192-0392, Japan

9:30 - 12:35 Session 13: Peptides in the Brain and CNS

Chairs: Yoshitaka Nagai (Osaka University)
Ernest Giralt (IRB Barcelona/University of Barcelona)

9:30 - 9:46 **O-102** **A Structure-Activity Relationship Study on the Marine-Sourced Bacterial Secondary Metabolite Nobilamide B Peptide**

Oliver John V. Belleza[1], Marco Paolo de V. Jacinto[1], Jortun O. Tun[2], Gisela P. Concepcion[2], Aaron Joseph Lucero Villaraza[1]

[1]*Institute of Chemistry, University of the Philippines-Diliman,*
[2]*Marine Science Institute, University of the Philippines-Diliman*

9:46 - 9:58 **O-103** **Development Through Combinatorial Chemistry of a Bioactive Copper Peptidyl Complex: Characterization and In Vitro/In Vivo SOD Activity**

Amandine Vincent[1], Christelle Hureau[2], Elodie Quévrain[1], Agnès Dancs[3], Katalin Selmeczi [3], Philippe Pelupessy[1], Clotilde Policar[1], Nicolas Delsuc[1]

[1]*Laboratoire des Biomolécules - UMR 7203 Department of Chemistry, Ecole Normale Supérieure, 24 rue Lhomond 75005 Paris, FRANCE,*
[2]*Coordination Chemistry Lab - UPR 8241 205 Route de Narbonne 31077 Toulouse, FRANCE,*
[3]*Laboratoire Structure et Réactivité des Systèmes Moléculaires Complexes- UMR CNRS UL 7565 Université de Lorraine 1 Boulevard des Aiguillettes, BP 70239 54506 Vandoeuvre-lès-Nancy Cedex, FRANCE*

9:58 - 10:18 **O-104 The Structure and Dynamics of Mutated Amyloid Beta Fibrils**

Daniel Huster[1], Juliane Adler[1], Alexander Korn[1], Holger A. Scheidt[1], Felix Hofmann[2], Sudipta Maiti[3], Perunthiruti K. Madhu[3]

[1]Leipzig University, [2]Martin Luther University Halle, [3]Tata Institute of Fundamental Research Mumbai

10:18 - 10:46 **O-105 Toxic amyloid fibrils formed by amyloid β-peptide on neuronal membranes: their mechanism of formation and structure**

Katsumi Matsuzaki

Graduate School of Pharmaceutical Sciences, Kyoto University

10:46 - 11:11 **Break**

11:11 - 11:39 **O-106 Unlocking the Mysteries of Amyloid Diseases with Macrocyclic β-Sheet Peptides**

James S. Nowick

Department of Chemistry, University of California, Irvine, Irvine, CA 92697-2025, USA

11:39 - 12:07 **O-107 Molecular therapy for the polyglutamine diseases using the aggregate inhibitor peptide QBP1**

Yoshitaka Nagai

Department of Neurotherapeutics, Osaka University Graduate School of Medicine

12:07 - 12:19 **O-108 Development of Novel Relaxin-3 Analogues for Blood-brain Barrier Penetration**

Han Sean Lee[1], Ross A.D. Bathgate[2], Joseph A. Nicolazzo[3], K. Johan Rosengren[1]

[1]School of Biomedical Sciences, Faculty of Medicine, The University of Queensland, Brisbane, Queensland, Australia, [2]Florey Institute of Neuroscience and Mental Health and Department of Biochemistry and Molecular Biology, The University of Melbourne, Victoria, Australia, [3]Drug Delivery, Disposition and Dynamics, Monash Institute of Pharmaceutical Sciences, Monash University, Victoria, Australia

12:19 - 12:35 **O-109 Construction of fluorescent biosensor using a turn-on-type imaging probe for GABA(A) receptors to discover allosteric modulators**

Seiji Sakamoto[1], Fumio Harada[1], Kazuma Amaike[1], Kei Yamaura[1], Shigeki Kiyonaka[1], Itaru Hamachi[1, 2]

[1]Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, [2]Core Research for Evolutional Science and Technology (CREST), Japan Science and Technology Agency

Day 5 December 7 (Fri), 2018

Main Hall, 2F, ROHM Theatre Kyoto

14:50 - 16:20 Session 14: Peptides: Today and the Future

Chairs: Koichi Fukase (Osaka University)
Anna Maria Papini (University of Florence)

14:50 - 15:20 **O-110 The RaPID way to discover bioactive pseudo-natural macrocycles**

Hiroaki Suga

Department of Chemistry, Graduate School of Science, The University of Tokyo

15:20 - 15:50 **O-111 Synthetic Lysine Acylation of Histones**

Motomu Kanai

Graduate School of Pharmaceutical Sciences, The University of Tokyo

15:50 - 16:20 **O-112 Ligand-directed chemistry for selective protein labeling in live cells**

Itaru Hamachi

Department of Synthetic Chemistry and Biological Chemistry, Kyoto University

16:35 - 17:25 Plenary Lecture 2

Chair: Katsumi Matsuzaki (Kyoto University)

16:35 - 17:25 **PL-02 De novo protein Design**

William DeGrado

Dept. of Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA 94158-9001, U.S.A.

17:25 - 18:00 Closing Ceremony